# ABOUT PADSCORM

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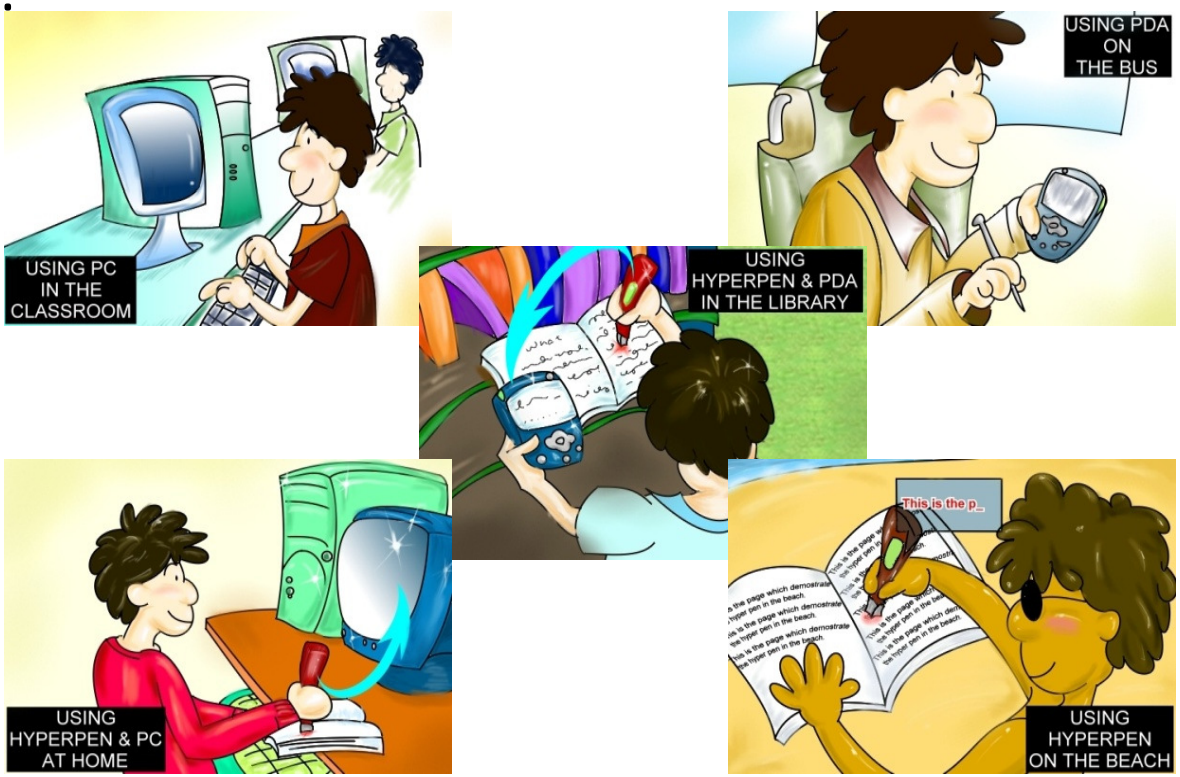
# WE USED TO ASK …

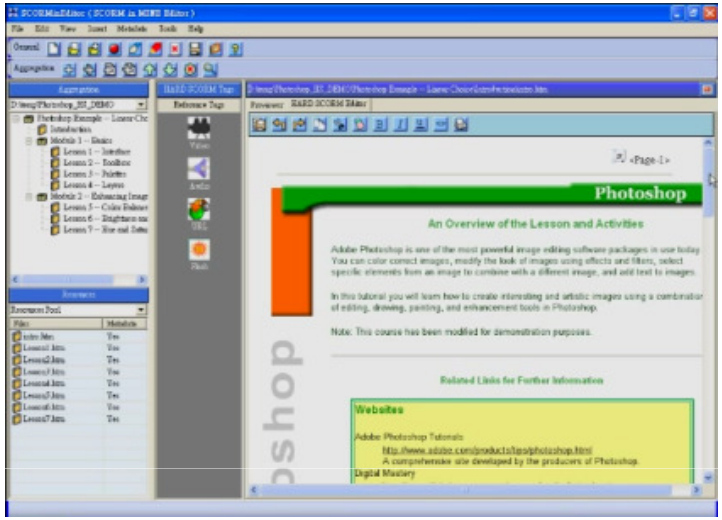
- Can I learn without going to specific place?
- Can I learn as long as I have spare time?
- Can I use any device?

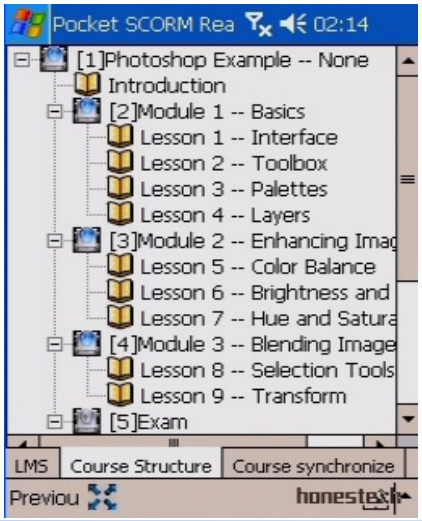
**Ubiquitous Learning**



# PREVIOUS RESULTS

- **HardSCORM Authoring** Tool
- A SCORM-Compliant **LMS**
- Repository based on **CORDRA**
- The **PocketSCORM** Project

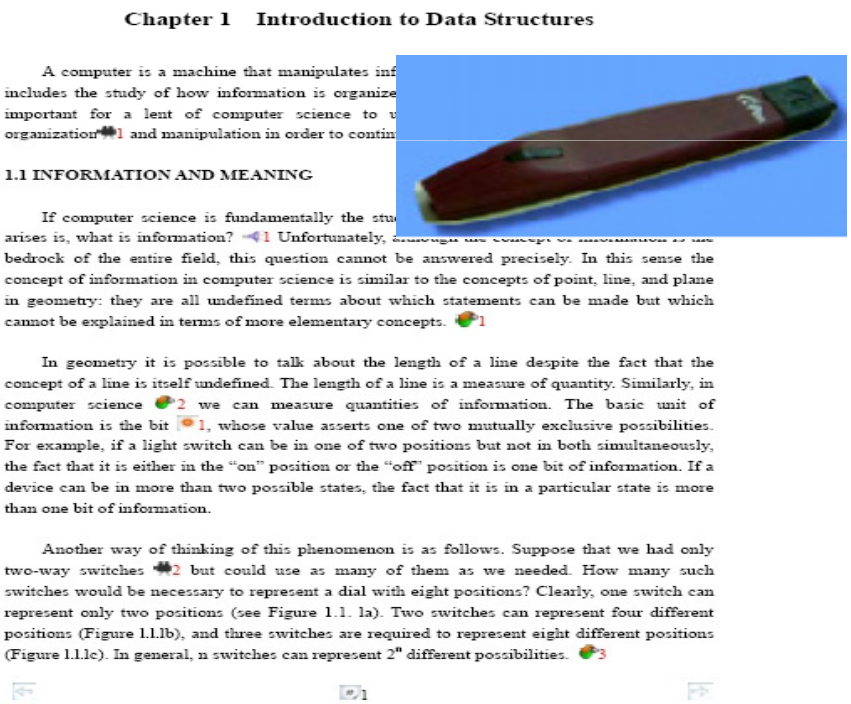



# POCKETSCORM (1/2)

- PocketSCORM = SCORM + Hardcopy Textbook + Hyper Pen + PDA + Phone + TV + PC + …

Hyper Pen and Book



**Chapter 1 Introduction to Data Structures**

A computer is a machine that manipulates inf
includes the study of how information is organize
important for a lent of computer science to
organization 1 and manipulation in order to contin

**1.1 INFORMATION AND MEANING**

If computer science is fundamentally the stu
arises is, what is information? 1 Unfortunately,
bedrock of the entire field, this question cannot be answered precisely. In this sense the concept of information in computer science is similar to the concepts of point, line, and plane in geometry: they are all undefined terms about which statements can be made but which cannot be explained in terms of more elementary concepts. 1

In geometry it is possible to talk about the length of a line despite the fact that the concept of a line is itself undefined. The length of a line is a measure of quantity. Similarly, in computer science 2 we can measure quantities of information. The basic unit of information is the bit 1, whose value asserts one of two mutually exclusive possibilities. For example, if a light switch can be in one of two positions but not in both simultaneously, the fact that it is either in the "on" position or the "off" position is one bit of information. If a device can be in more than two possible states, the fact that it is in a particular state is more than one bit of information.

Another way of thinking of this phenomenon is as follows. Suppose that we had only two-way switches 2 but could use as many of them as we needed. How many such switches would be necessary to represent a dial with eight positions? Clearly, one switch can represent only two positions (see Figure 1.1. 1a). Two switches can represent four different positions (Figure 1.1.1b), and three switches are required to represent eight different positions (Figure 1.1.1c). In general, n switches can represent $2^n$ different possibilities. 3

1

PDAs

PCs

# POCKETSCORM (2/2)

- Challenges we have to overcome
  - limited display capability
    - content reorganization mechanism
    - content extraction mechanism
  - limited resource types
    - Audio/video (specific decoder needed)
    - (rich) text format preferred
  - limited storage capability
    - pre-processing mechanism needed
    - Web services needed
  - Connection Bandwidth
    - 3G/wireless network only
    - Limitation with GPRS

# WITH THE TIME GOES BY, WE FOUND…

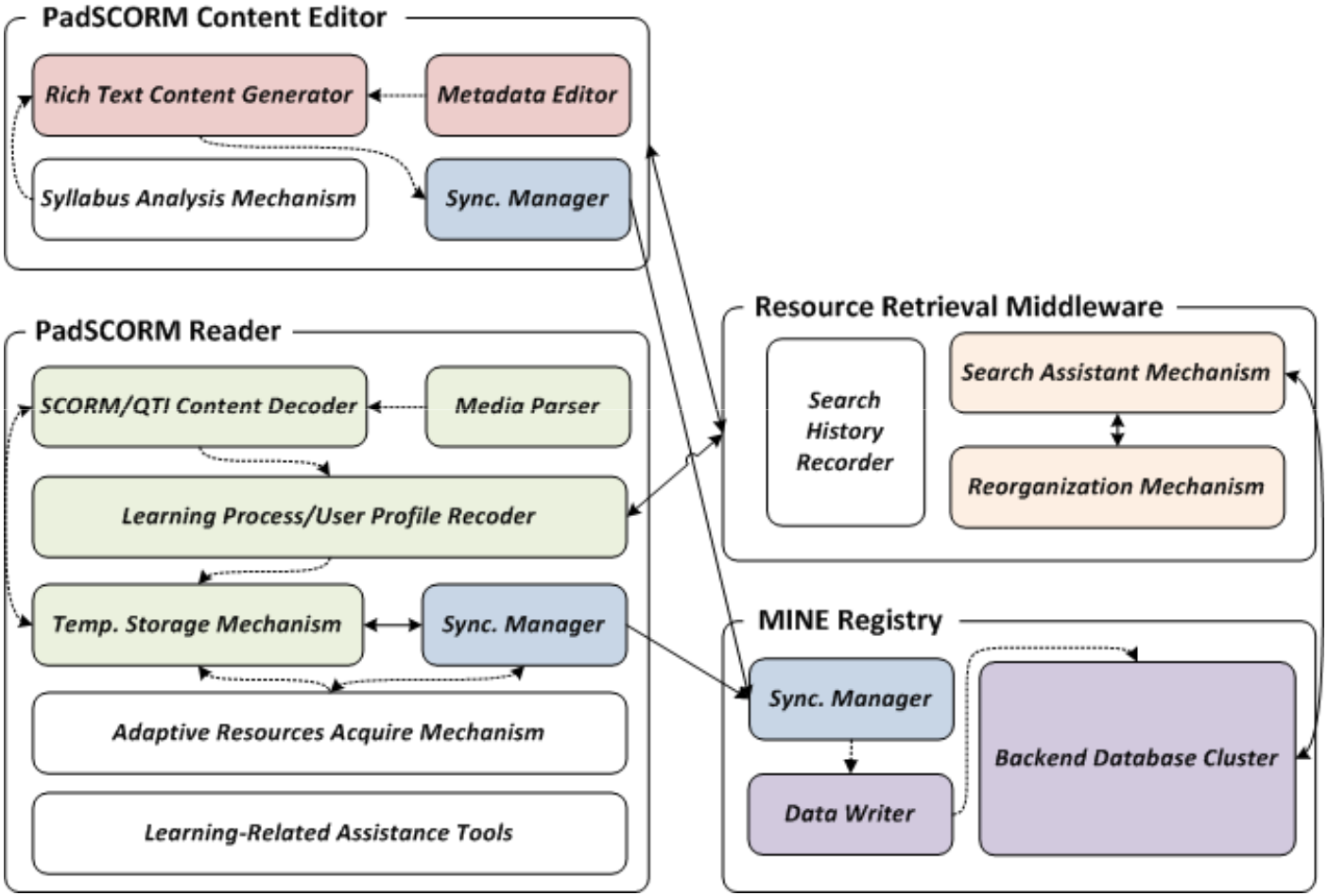
- Amazon Kindle has set up a successful example of the possibility/trend to e-book
- Devices are getting powerful and actually … interesting
  - large size of store capability and display
  - excellent  file format support
  - attractive interaction strategies
  - friendly user interface
  - … and all you can think of
- The impact from Apple iPod/iPhone or iPad
  - Apple Store (various applications)
  - iTunes U. (adequate learning resources)
  - with fun and ubiquitous

# With The New IPad, we think …

- What if **PocketSCORM** Project can be found in Apple Store ?
- Ubiquitous Learning is powerful
  - escape from limited hardware resources
  - with well-developed universities (MIT, Stanford, Oxford, …)
- The possible vision of UPS (Ubiquitous Personal Learning)
  - deliver learning/assessment resources adaptively
  - trace learning progress individually

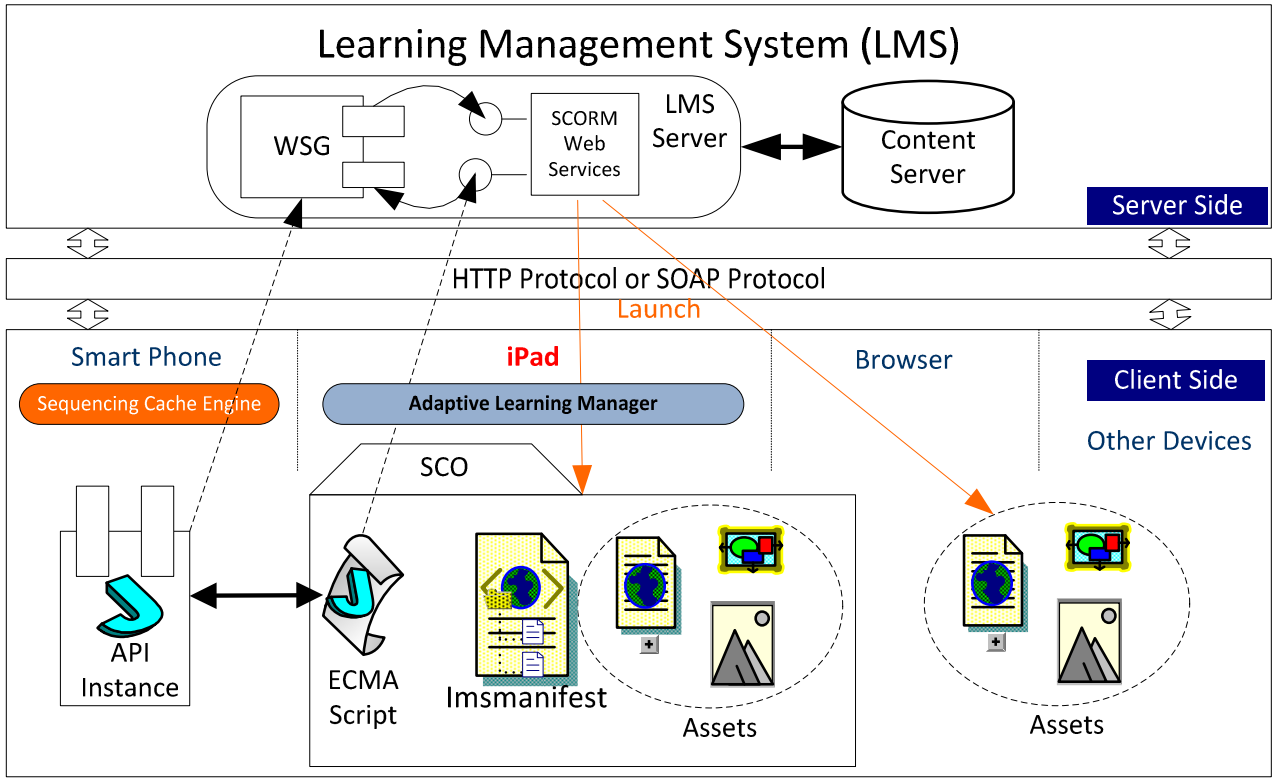
***PadSCORM** is now available on iPhone/iPod*

# PADSCORM – AN PROJECT OVERVIEW



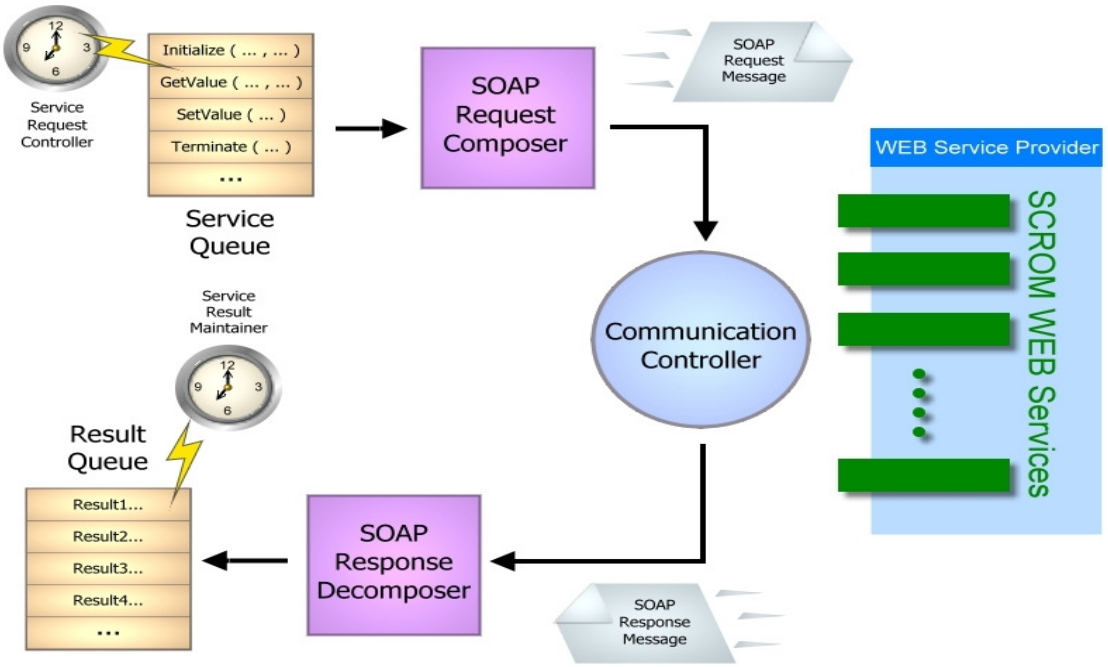
# CORE TECHNIQUE (1/4)

- Multi-devices for different learning scenario
- Enhance multimedia streaming capability through Web service



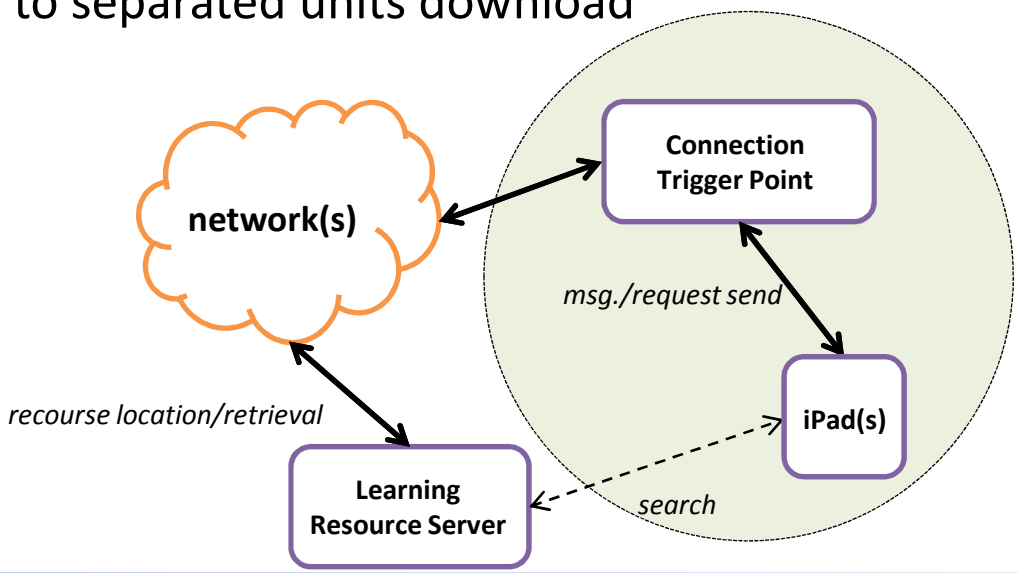
# CORE TECHNIQUE (2/4)

- Extend ECMA script to cope with an off-line learning model
- Use service queue and result queue
- Use SOAP to encapsulate messages



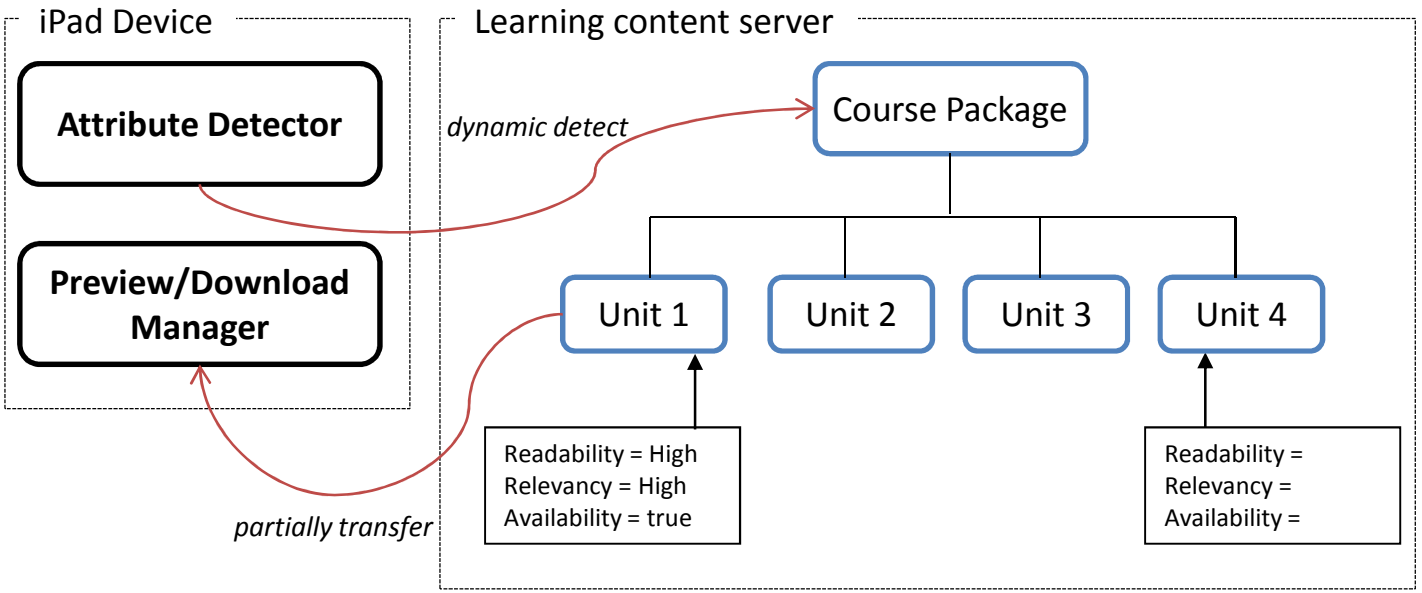
# CORE TECHNIQUE (3/4)

- Available Resources Discovery
  - In the Local host … iPad device
  - In the Remote Server … backend content server
- Partially Download or Preview
  - Check learning content before download
  - Full course download shifted to separated units download

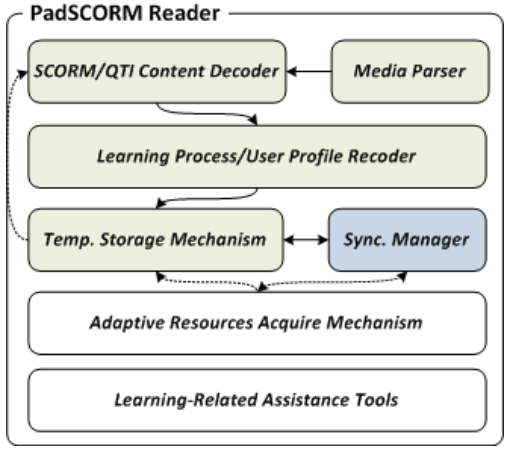


# CORE TECHNIQUE (4/4)

- Dynamic Attribute Checking Mechanism
  - each unit will be assigned with three basic attributes
    - *Readability*: see if the unit is suitable for user
    - *Relevancy*: relevancy degree between the unit and other learning contents
    - *Availability*: see if the unit can be downloaded through current connection

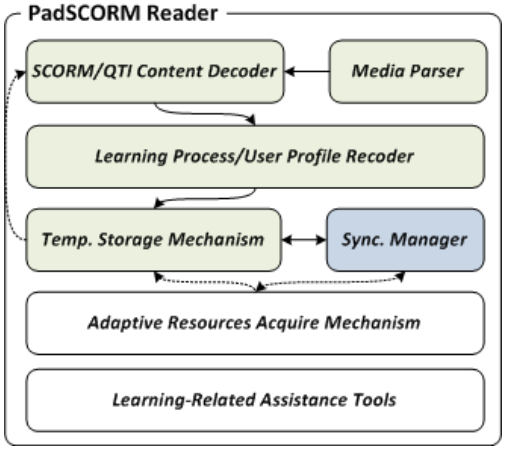


# INSIDE THE PADSCORM PROJECT



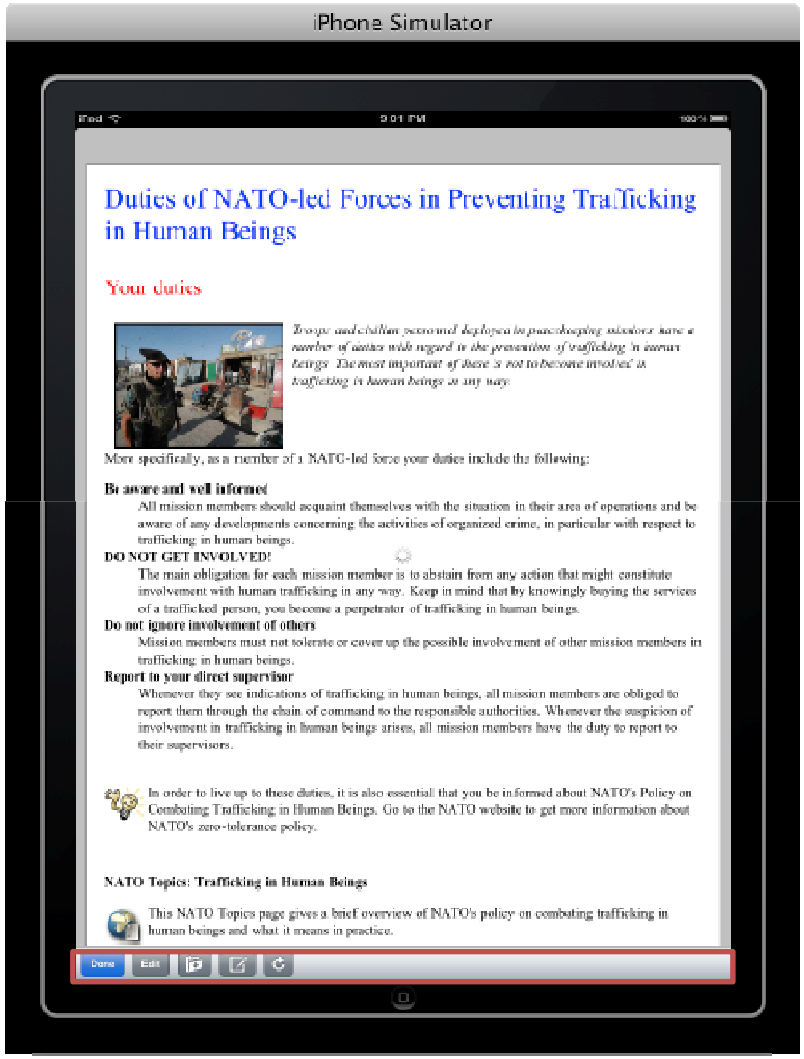

- SCORM/QTI reader
  - Display: tree view → table view
  - Operation: button click → touch
  - Multimedia Player: no more add-ons needed
- Temporary Storage Strategy
  - directly use storage capacity from the device (up to 64G currently)
- Synchronization Mechanism
  - Synchronization Order
    - External information → learning history → profile information
  - Synchronization Trigger
    - Automatically/manually

# INSIDE THE PADSCORM PROJECT




- Learning Tools
  - Personal Note Manager
    - highlights
    - write down what learners have learned
  - Search for additional information
    - more multimedia information is available
    - connect the search results and the note
- Learning process/User profile
  - record through LIP (learner information packaging) format
  - Three content types are adopted: Referential, Temporal, and Privacy
    - <Identification>, <Activity>, <Goal>, <Competency>, <Interest>, <Transcript>, <Affiliation> … 7 categories out of 11
    - 19 detail elements out of 41

# INSIDE THE PADSCORM PROJECT




SCORM/QTI reader on iPad is available now, related functionalities are also provided …

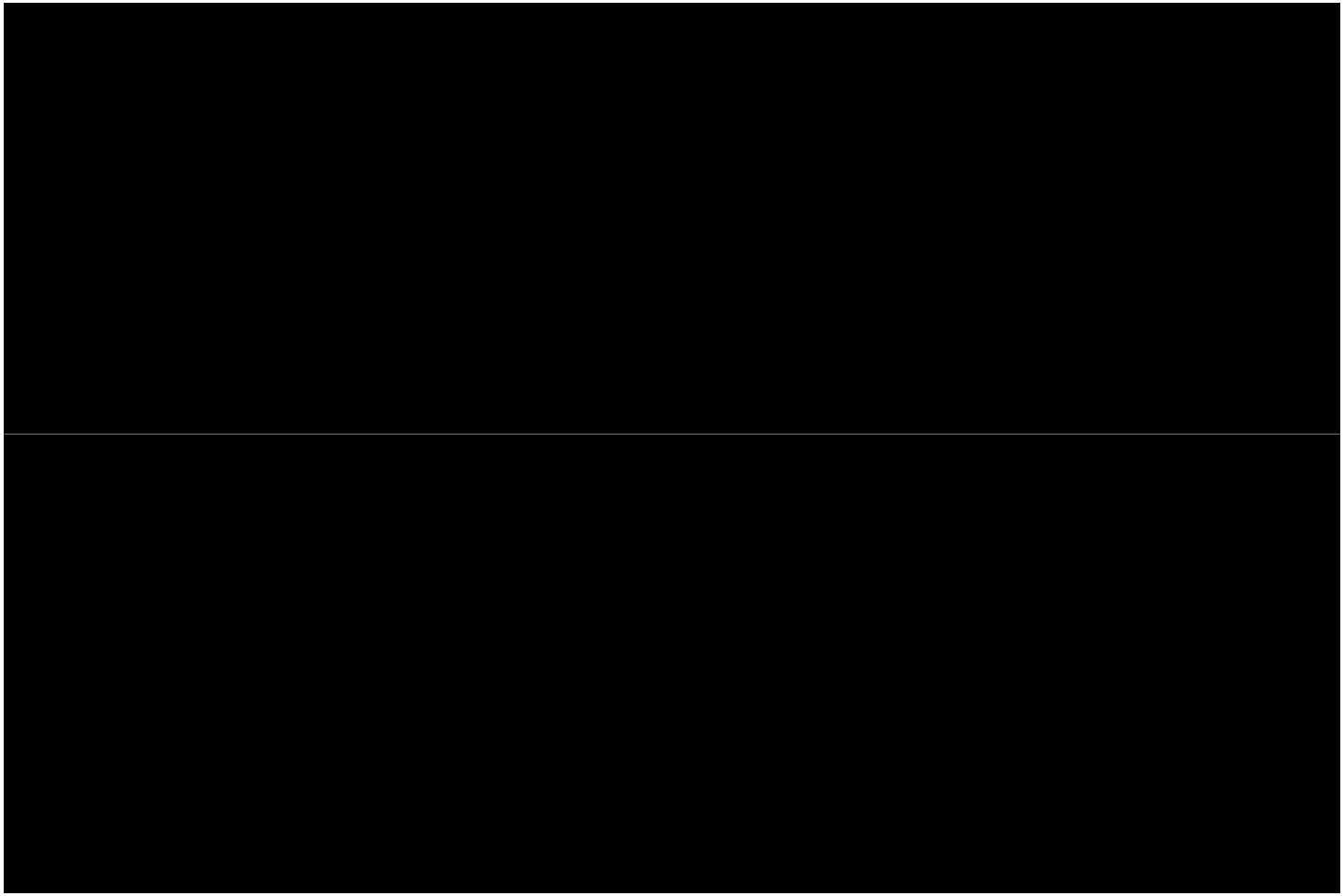
*snapshot from iPad Simulator @ 2010.Apr.27*

# INSIDE THE PADSCORM PROJECT


Audio/Video format are acceptable to run on iPad …

*snapshot from iPad Simulator @ 2010.Apr.27*

# VIDEO DEMONSTRATION

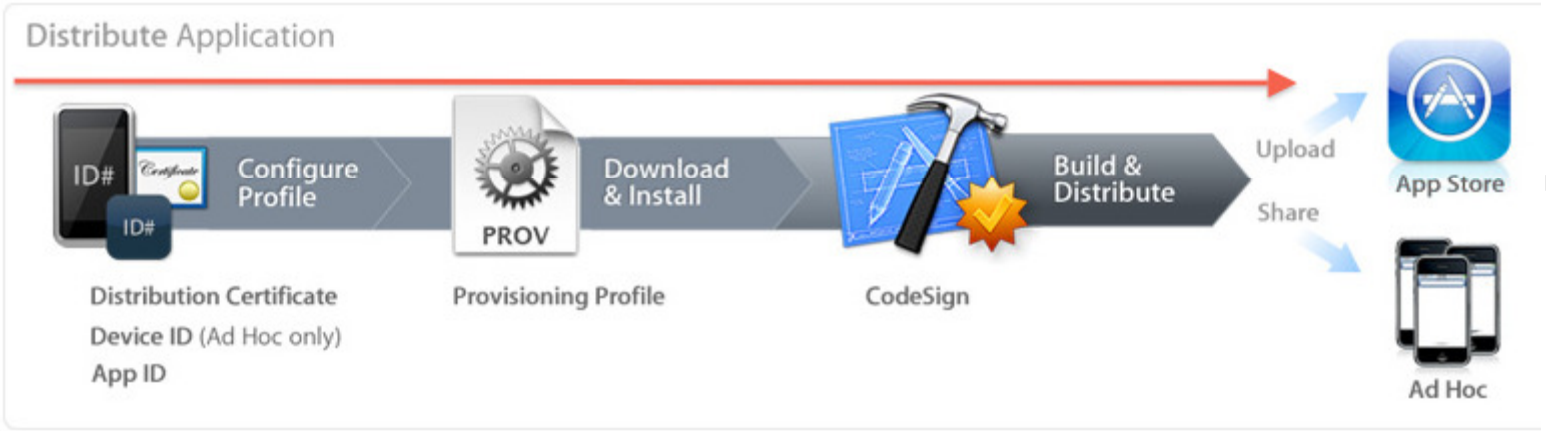


# SUMMARY

- To extend the PocketSCORM Project, the QTI objects are now available on PadSCORM
- Multimedia Information (audio, video, …etc) runs smoothly on current PadSCORM simulator
- Learning progress is recorded on device temporarily and wait for synchronization
- More related tools and adaptive learning mechanisms will be provided very soon

# CURRENT STATUS

*currently under review*




**MINE PadSCORM**

*now available on iPad/iPod Touch*

# THANK YOU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